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## APPARATUS AND METHOD FOR REDUCED COLD START EMISSIONS

## ABSTRACT

An exhaust system for an internal combustion engine having a plurality of cylinders, comprising: a exhaust manifold for providing fluid communication of exhaust of the plurality of cylinders to a catalytic converter, the exhaust manifold comprising a first exhaust pipe and a second exhaust pipe, the first exhaust pipe being in fluid communication with the second exhaust pipe and the second exhaust pipe being in fluid communication with the catalytic converter, the first exhaust pipe providing a first fluid path for exhaust of a first plurality of cylinders of the engine and the second exhaust pipe providing a second fluid path for exhaust of a second plurality of cylinders of the engine, the second fluid path being shorter than the first fluid path; a controller for determining whether to deactivate the first plurality of cylinders in accordance with a predetermined engine starting condition, wherein deactivation of the first plurality of cylinders causes the second plurality of cylinders to operate at a condition corresponding to an engine output demand, wherein an exhaust of a first temperature is expelled by the second plurality of cylinders into the catalytic converter, the first temperature being greater than an exhaust temperature that would be generated by the first and the second plurality of cylinders operating at the condition corresponding to the engine output demand.